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AUTHOR	Grau, Glen, Ed.; Kerlan, Julius H., Ed.
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ABSTRACT

The information contained within this booklet describes for high school students the occupation itself, training terms, and desirable qualifications for the sixteen most active apprenticeable trades, namely: electrical wireman, carpenter, plumer, machinist, pipefitter, auto mechanic, lithographer, sheet metal worker, pressman, floor coverer, bricklayer, painter and decorator, compositor, tool and diemaker, millwright, and bookbinder, The distribution of active apprentices by major industries in Minnesota, the distribution of apprentices in the top sixteen trades, the distribution of active apprentices by industry and trade in Minnesota, how and where to apply for apprenticeships in Minnesota, a list of further publications to explore, and a section on "You as an Apprentice" are included. The final section emphasizes the importance of self knowledge in the decision to prepare for and apply for an apprenticeship. (KP)

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CAREER OPPORTUNITIES THROUGH

APPRENTICESHIP

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CAREER OPPORTUNITIES THROUGH

apprenticeship

EDITORS:
Glen Grau, Field Representative, Voluntary Apprenticeship Division, Minnesota Department of Labor and Industry.

Julius H. Kerlan, Consultant, Pupil Personnel Services Section, Minnesota Department of Education.

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1972 (Revised)

exploring and planning

Are you giving thought to your future career? In making your plans for your future, you must have knowledge of the world of work. Although you may not make a definite or final choice of a job for several years, it is not too early for you to begin to study the many ways in which people earn a living and find satisfaction in their work. One of the purposes of this booklet is to provide information about some of the apprenticeable occupations which may be helpful as you begin to think seriously about your career choice. An **apprenticeable occupation** is one whereby the worker learns the skills of a trade by direct on-the-job experience plus some classroom instruction.

The number of occupations from which you make your choice is very large. Different occupations call for different levels of skill on the part of the worker. Each level of skill requires its own amount of training. For example, a lithographer, an occupation in the printing trades, should have vocational school training before becoming an apprentice. The space scientist must be college-trained. The laborer, on the other hand, needs little or no training for his work.

A career which you eventually choose should give you the opportunity to express yourself as a person. This is accomplished by using your talents and interests in seeking satisfaction in your work. Often in a career you learn to play a certain role on the job and in the community as well. You should be satisfied with the role you are expected to play. In a career you associate with certain kinds of people and you should enjoy working with them. Do you feel the need of satisfaction in being able to do a good job? Would you like to be recognized for your accomplishments? Would you like to be a reasonably happy productive citizen? How do you feel about earning an adequate income? Do you feel that you would like to contribute to the society of which you are a part? These are questions that may be answered through finding successful employment.

The apprenticeship program may be a way for you to reach your goals. This booklet will give information which can help you decide if apprenticeship is for you. If the program interests you, you may then wish to explore the various apprenticeable occupations.

You should talk over the various trades with your parents, teachers, counselor, and with friends and relatives who are employed in trades which interest you. You should also read the occupational materials on the trades—which are in your school library. Your counselor will have other vocational information which he can make available to you. If possible, by field trips or by other means, take advantage of opportunities to visit industry. Talk with workers and their supervisors about the opportunities and problems in the trades that you are exploring.

exploring and planning

Classes in industrial arts are other means by which you can explore industrial, trade and technical fields. Such classes may help you to find out if you are interested in working with your hands, using hand and power tools, using and reading measuring instruments, handling and understanding the nature of materials used in manufacturing and building. These classes will give you an understanding of these areas in general. In short, all of the information you can gather about yourself and about the trade requirements and opportunities should be used to help you in deciding about your career.

A great deal of time and money is required to prepare for most careers. In apprenticeship, however, you may actually **earn while you learn** in your chosen trade. An apprenticeship then can be as valuable to you as a 4-year scholarship. Since there are many more applicants for many of the apprenticeship opportunities than there are vacancies, you should also expect to find keen competition for some of these trades.

This booklet deals only with those apprenticeship programs approved by the Minnesota Apprenticeship Division, Department of Labor and Industry. You should know, however, that other training during employment is provided by some employers. It may be called either apprenticeship or on-the-job training, and its purpose is to prepare new employees for the jobs to which they will be assigned. The main difference is that the ones we are telling about in this booklet require, in all cases, a formal agreement under the directions of the Minnesota Apprenticeship Division.

publications to explore!

Apprentices, Chronicle Occupational Briefs, Chronicle Guidance Publications, Inc. Moarvia, New York (1967) 35 cents.

Apprenticeship As A Job Choice, Minnesota Dept. of Manpower Services, Apprenticeship Information Center, 390 North Robert Street, St. Paul, Minnesota, 55101. Leaflet, free.

Apprenticeship Past and Present, U.S. Dept. of Labor, Manpower Administration, Bureau of Apprenticeship and Training, Washington, D.C. 20402 (1970) 25 cents.

Apprenticeship Training in Minnesota, Minnesota Department of Education, Pupil Personnel Services, St. Paul, Minnesota 55101 (1961) (under revision)

Apprenticeship Training-Sure Way To A Skilled Craft, United States Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training, Washington, D.C. 20402, (1970) 15 cents.

Career Through Apprenticeship, A, Minnesota Department of Education, Pupil Personnel Services, Centennial Building, St. Paul, Minnesota 55101. Leaflet, free.

Careers With The State of Minnesota, Minnesota Department of Education, Pupil Personnel Services, Centennial Building, St. Paul, Minnesota, 55101. (1968 revised) $1.15.

Guide on Apprenticeship, Minnesota Department of Manpower Services, Apprenticeship Information Center, 390 North Robert Street, St. Paul, Minnesota 55101. (In print) $1.25.

Job Guide for Young Workers, Superintendent of Documents, U.S. Government printing office, Washington, D.C. 20402. (1965) 45 cents.

Know Your Employment Rights, U.S. Department of Labor, Manpower Administration, Washington D.C. 20402 (1970 revised) 20 cents.

Merchandising Your Job Talents, Minnesota Dept. of Manpower Services, 390 North Robert St., St. Paul, Minnesota 55101 (1970) free.

Minnesota Apprenticeship Program, Minnesota Counselor's File, Bulletin #1, Minnesota Department of Education, Pupil Personnel Services, Centennial Building, St. Paul, Minnesota, 55101 (1968) free.

National Apprenticeship Program, The, U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship Training, Washington D.C. 20402. (1968) (under revision) free.

Occupational Outlook Handbook, 1972-73 Edition, United States Department of Labor, Bureau of Labor Statistics, Bulletin No. 1650 Washington, D.C. 20402. $6.25.

Optimum Training System in Apprenticeable Occupations, An, Volume I, U.S. Department of Labor, Manpower Administration, Washington, D.C. 20402. (1970) 25 cents.

Vocational Opportunities and Apprenticeship Standards in The Construction Industry, Association of General Contractors of Minnesota, Inc. Minneapolis, Minnesota, free.

Why Not Be An Apprentice? and become a skilled craftsman, U.S. Department of Labor, Women's Bureau, Washington, D.C. 20210. Leaflet 52, (1970) free.

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apprenticeable trades

The information which follows describes only the sixteen most active apprenticeable trades at present; namely: Electrical Wireman, Carpenter, Plumber, Machinist, Pipefitter, Auto Mechanic, Lithographer, Sheet Metal Worker, Pressman, Floor Coverer, Bricklayer, Painter and Decorator, Compositor, Tool and Diemaker, Millwright, Bookbinder. You may want to talk to your teachers, counselors, or librarian about sources of information on other occupations not included here. Page 5 may also be helpful in locating other information.

electrical wireman

Description of the Occupation:

An electrical wireman is a craftsman who installs the wires and equipment that deliver current in the construction, maintenance, and operation of electrical systems. This means he may work on new or old buildings, houses, power plants and other similar places. An electrical wireman may work indoors or outdoors, sometimes in bad weather; he may work in high places or with high voltage current, either of which is hazardous. A wireman may be employed principally by electrical contractors although he may be employed in industrial plants and by power companies. His job is a very responsible one because carelessness can result in fire, in the breakdown of expensive equipment causing production losses, in accidents, and in other bad effects.

Training Term:

The apprenticeship term for wiremen is 8000 hours in about 4 years and yearly related training. One working at this trade must have a state license. To be admitted to the license examination given by the Minnesota State Board of Electricity, the applicant is required to have a required background of knowledge and experience in the electrical field. Satisfactory completion of the apprenticeship program qualifies the apprenticeship to take the test.

Desirable Qualifications:

High school graduation is recommended. The applicant should have taken algebra, geometry, and science courses. He must be physically able to perform the necessary work. Post high school vocational courses in electricity are desirable and in some cases required.

carpenter

Description of the Occupation:

Carpentry is one of the common construction trades. Despite recent changes in tools and methods, this craft still requires many hand skills. A carpenter uses blueprints and specifications to determine the types of lumber or other materials and the sizes to be used. He then uses measuring instruments and hand or power woodworking tools to shape and fasten them together. Carpenters are employed in the erection of all types of wooden structures including form building, framing, inside and outside finishing and installation of all types of hardware. A carpenter may work indoors or outdoors. Those who go into commercial construction are often required to work on high places, hence there is much stress on safety. Although carpentry was formerly quite seasonal, modern building methods now enable the carpenter to be employed throughout the year.

Training Term:

The apprenticeship term is 7000 work hours, in approximately 3½ to 4 years plus a minimum requirement of 144 hours of related class training per year.

Desirable Qualifications:

High school graduation is recommended. Woodoworking shop in high school is helpful, as is two years of high school mathematics. The applicant to this trade should possess good health, good eyesight, and should have average physical strength in order to perform his work. He should like to work outdoors, enjoy working with his hands and with tools, and have good coordination with his hands and arms.

plumber

Description of the Occupation:

A plumber is a craftsman who installs a system of pipes and equipment to supply us with water and another system of pipes and equipment to take care of waste and sewage. This means he handles waste, sewage, and soil pipes, and vents and leader pipes for hot and cold water for homes, commercial and industrial purposes. A plumber assembles and connects fixtures and appliances. He also maintains and repairs plumbing. The plumber frequently must stand for prolonged periods and he occasionally must work in cramped or uncomfortable positions. The risks are those common to the construction industry, hence there is much emphasis on safety. A plumber is usually employed all through the year. The plumber is employed by plumbing contractors or may sometimes be self-employed.

Training Term:

The apprenticeship term is 8780 work hours in not less than 5 years, in addition to annual related training. This occupation is one which is licensed by the State of Minnesota. Knowledge and experience qualifications must be met in order for the applicant to be admitted to the license examination given by the Minnesota Department of Health. Satisfactory completion of the apprenticeship program meets the requirements for admission to the license examination.

Desirable Qualifications:

High school graduation is recommended. Preparation in high school mathematics and physical science is desirable. The applicant must be physically able to perform the necessary work. Post high school vocational courses in plumbing are desirable and, in some areas, required.

machinist

Description of the Occupation:

A machinist is a craftsman who is skilled in the use of such machine tools as the drill press, the milling machine, the lathe, the screw machine, the radial drill press, the planer, the shaper and slotter, the boring mill, the turret lathe, the grinder, and various other special machines. The machinist also reads blueprints and engineering sketches and does lay-out work. He is acquainted with a variety of metals and knows how to use the various types of cutting tools on them. He must be able to use measuring instruments. Hand work performed includes shaping, fitting and polishing of metal parts. There are strict safety regulations, since the machinist works close to high-speed machines and tools. Machinists generally work all the year round and are employed by industrial plants and machine shops.

Training Term:

The apprenticeship term is 8000 hours in not less than 4 years. In addition to this term, a minimum of 144 hours of related training per year is required.

Desirable Qualifications:

High school graduation is required. Science, drafting and mathematics are important high school subjects. Post high school vocational machine shop and mathematics courses are desirable. Mechanical aptitude is very important.

pipefitter

Description of the Occupation:

A pipefitter is a craftsman responsible for putting together, installing and maintaining all kinds of pipe systems. The pipefitter installs both high and low pressure pipes that carry hot water, steam and other liquids and gases, especially those in industrial and commercial buildings. The pipefitter may specialize in refrigeration, gas fitting, or steam fitting. The risks are those common to all of the building trades. Most pipefitters are employed throughout the year by contractors in building construction. Others are employed as maintenance personnel in the petroleum, chemical and food processing industries.

Training Term:

The apprenticeship term is 8780 work hours in not less than 5 years. In addition to this term a minimum of 144 hours of related training per year is required. One working at this trade must have a state license. Knowledge and experience qualifications must be met before the applicant can be admitted to the license examination given by the Minnesota Department of Labor and Industry. Satisfactory completion of the apprenticeship program meets requirements for admission to the license examination.

Desirable Qualifications:

High School graduation is preferred. Courses in high school athematics and physical science are desired. Post high school vocational courses in welding are also desirable.

auto mechanic

Description of the Occupation:

Automobile Mechanics are the largest group of repairmen in the labor force in the United States. Since automobile engines are becoming more powerful and complicated, and more automobiles are being equipped with automatic transmissions, power steering and other modern developments, the average motorist is becoming increasingly dependent on skilled automobile mechanics. These craftsmen repair and maintain passenger vehicles and light trucks. Their work may include the use and care of special tools and equipment; work on brakes, steering and front suspension; clutch, transmissions (both conventional and automatic), engine tune-up, and installing and maintaining electrical and accessory equipment. Because hazards are usually due to unsafe work habits, safety practices are stressed. At times, automobile mechanics find it necessary to work in very cramped quarters. Mechanics are employed by automobile dealers and independent repair shops.

Training Term:

The apprenticeship term is 8000 work hours in not less than 4 years. In addition to this term, a minimum of 144 hours of related training per year is required.

Desirable Qualifications:

High school graduation is preferred. An aptitude for mechanics, good eyesight and agility are necessary. Post high school vocational courses in automotive subjects are desirable.

lithographer

Description of the Occupation:

A lithographer is a craftsman in the printing trades who uses a printing method based on the principle that grease and water do not mix. This differs from the letterpress principle of an ink impression under pressure against the paper. Lithography is also referred to as a **photo offset** process because the image is not transferred directly from the plate to the paper but a rubber roller is used to lift the image from the plate and transfers it to the paper. Plates for this kind of printing are done by a photographic process.

Lithography is generally divided into 4 main areas which include camera work, stripping, platemaking, and presswork. The **camera man** starts the plate making process by photographing the copy to be printed. The stripper arranges the developed film in the proper position so that the plate can be made from it. The **platemaker** exposes the photo sensitive plate to light through the film negative and chemically develops it. **Pressmen,** assisted by helpers and workmen called feeders, prepare the press by installing the plate, ink and paper and operate the press during the actual printing. In small shops the lithographer may work in all of these areas.

Training Term:

The apprenticeship term is from 4 to 5 years. Related training may be taken at the Lithography and Photoengravers Technical Institute in the Twin Cities area. Elsewhere in the state, related training may be offered in public or private vocational schools. During each year, a minimum of 144 hours of related classroom instruction is required.

Desirable Qualifications:

The applicant should be a high school graduate. Students who have had vocational school training are definitely preferred. A wide general background training in all phases of printing is desirable; subjects such as chemistry, physics, mathematics, electronics, photography and drafting are helpful.

sheet metal worker

Description of the Occupation:

A sheet metal worker is a skilled craftsman who manufactures, installs, repairs and services all sheet metal work of U.S. No. 10 gauge or lighter metals used in all air handling systems. He also does testing and balancing of air systems and prepares shop and field sketches used in fabrication and erection. A sheet metal worker has many choices in the type of work he may do. He might work in the sign industry making signs, or do heating and ventilating, kitchen equipment, air pollution control, architectural sheet metal in connection with roofing, or general sheet metal work. It is an interesting, well paid occupation, however, there may be some seasonal unemployment.

Training Term:

The apprenticeship term is 8000 work hours in not less than 4 years. In addition to this term, a minimum of 144 hours of related training per year is required.

Desirable Qualifications:

High school graduation is preferred. Preparation in high school mathematics (including geometry), drafting, and industrial arts courses in metal is most desirable. Post high school vocational sheet metal courses provide valuable training before becoming an apprentice and in some cases are required.

pressman

Description of the Occupation:

A pressman is a skilled craftsman who prepares the printing press for operation whether the printing method is lithography, letterpress, gravure, or silk screen. This includes preparing and focusing of plates, type forms, or screens in the press; placing ink in the fountain; adjusting the press to obtain a clear and distinct image; and setting up and adjusting the feeder which passes the paper into the press. When the preparations are completed, the pressman tends the press during the run and corrects any malfunctions before paper and ink are wasted. On smaller presses one pressman is able to do the necessary work. On larger presses, a crew is used which may include pressmen, press feeders, and helpers.

Training Term:

Apprentice pressmen receive not less than four years of job training plus related classroom training. Training varies according to the kind of printing being done by the apprentice and the kind and size of press which he is called upon to operate. (Shorter training terms of two to four years apply to press feeder and assistant apprentices.)

Desirable Qualifications:

A high school education or equivalent is the general requirement for entering this apprenticeship. Some desirable subjects include chemistry and physics, some mathematics (particularly in measurement). Mechanical aptitude and good color perception are important.

floor coverer

Description of the Occupation:

The floor coverer (floor covering mechanic and floor layer) is a craftsman who installs, replaces, or repairs tile, linoleum, and other floor coverings including carpeting on floors in residential, commercial and industrial buildings. He must know how to measure, cut, match, sew and fit. He works many times in cramped quarters. on his knees, or stoops, bends and lifts. He is usually employed by floor covering contractors who may specialize in commercial, industrial or residential work. Floor covering retailers, department stores and decorators also employ floor coverers.

Training Term:

The apprenticeship term is 6000 work hours in 3 years. In addition to this term, a minimum of 144 hours of related training per year is required.

Desirable Qualifications:

High school graduation is preferred. The applicant needs good manual abilities; a neat appearance: and a pleasant, business-like manner.

bricklayer

Description of the Occupation:

A bricklayer is a craftsman who constructs walls, partitions, fireplaces, chimneys, and other structures from brick, tile, and other masonry materials. He also installs precast panels on buildings, and brick linings in industrial kilns or furnaces. The bricklayer is employed on new building construction and sewer construction or remodeling. He is exposed to most of the risks common to the construction trade. His work may be somewhat seasonal, but with modern methods bricklaying is becoming less so. The bricklayer does spend more time at outdoor work than most construction workers. He is employed by masonry contractors and general contractors.

Training Term:

The apprenticeship term is 6000 hours in three years. In addition, a minimum of 144 hours of related training per year is required.

Desirable Qualifications:

High school graduation is preferred. The applicant must be able to do careful, accurate work, be in good physical condition and have considerable strength and dexterity.

painter and decorator

Description of the Occupation:

A painter prepares the surfaces of buildings and other structures, then applies paint, varnish, enamel, lacquer, and other types of covering materials. He must be skilled in handling brushes and other painting tools in order to apply paint thoroughly, uniformly, and rapidly to any type of surface. He must also be able to mix paints, match colors, and have knowledge of paint composition and color harmony. His mechanical activities include erecting scaffolding and suspension rigging and using spray guns. Painters are employed throughout the year by painting contractors or may be self-employed. The painter may work indoors and at times, he may work in high places.

Training Term:

The apprenticeship term is 6000 work hours in 3 years plus the addition of 144 hours of related training per year.

Desirable Qualifications:

High school graduation is preferred. While in high school, subjects such as mathematics, chemistry, art, and drafting are desirable. An applicant should have manual dexterity, a discerning color sense, and he should have no skin or inhalant allergies.

compositor

Description of the Occupation:

A compositor is a craftsman in the printing trades who performs any or all of the duties concerned with setting type by hand or machine. Compositors are employed in almost every community throughout the country. Compositors work in newspaper plants, commercial printing plants, publishing houses, trade plants, advertising agencies and advertising departments of large firms. Hand compositors set type requiring very fine composition such as that used for advertising copy, and for jobs too small to be set by machine.

Typesetting machine operators set type much more rapidly than by hand—using linotype machines, monotype keyboards and casters, phototypesetting machines or teletypesetters (which perforate tape for typesetting). Compositors are now beginning to use computers in typesetting.

Training Term:

The apprenticeship term is generally six years. Related training is provided by correspondence courses through the International Typographer's Union. During each of these years a minimum of 144 hours of related classroom instruction is required.

Desirable Qualifications:

Applicants for apprenticeship should be high school graduates and should be in good physical condition. They need background in English, especially spelling, punctuation and grammar. Printing and typing courses are useful, as well as an interest in electronics and photography.

tool and diemaker

Description of the Occupation:
Tool and Die Makers are craftsmen who are skilled in the use of all types of machine tools (lathes, drill presses, milling machines, grinders, boring mills, shapers, etc.). Also, they are skilled in the use of all hand tools and precision measuring instruments. The Tool and Die Maker builds all types of tools, dies, jigs, fixtures, and gages. He makes the individual parts and assembles, inspects, and tests the finished tool or die. He must be able to read and understand blueprints and engineering sketches. It is necessary to work with different types of metals and a high degree of accuracy is required. Safe work practices are important in working with metal cutting equipment. Tool and Die Makers are employed in many industrial plants as well as in tooling job shops.

Training Term:
The apprenticeship term may range from 8,000 to 10,000 hours depending on the individual program being followed (4 to 5 years). In addition to the apprenticeship term, a minimum of 144 hours of related training per year is required.

Desirable Qualifications:
High school graduation is required. Science, drafting, and mathematics are important high school subjects. Post high school vocational tool and die, and mathematics courses are desirable. Study courses in the nature and properties of metals are also valuable. Mechanical aptitude and interest are very important.

millwright

Description of the Occupation:

Millwrights are craftsmen who assemble, erect, install and maintain all types of industrial machines and equipment. They also alter present installations and move production equipment and machines. They are skilled in the use of a wide variety of hand and power tools, welding and brazing of all types of metals and use of all types of welding equipment, optic tooling, precision measuring tools, hoists, and cranes. They work from plans, diagrams, and sketches, and must be acquainted with manufacturer's operation and maintenance publications that apply to the industrial equipment. Also, basic knowledge of electronic and/or wiring hydraulic-pneumatics, lubrication, and diesel equipment is important. Millwrights are called upon to construct the foundations or mountings of the machinery and equipment. Because the work requires moving extremely heavy machines, conveyors, etc., emphasis is placed on safe work practices. Millwrights are employed in most types of industrial and manufacturing plants, by machinery and equipment manufacturers, and by construction contractors.

Training Term:

The apprenticeship term may range from 7,000 to 8,000 hours depending on the individual program being followed (3½ to 4 years). In addition to the apprenticeship term, a minimum of 144 hours of related training per year is required. Also, schooling is always available for upgrading as different materials and equipment enter into automation.

Desirable Qualifications:

High school graduation is recommended. All apprentices must have sufficient education to take related instruction. Mechanical aptitude and interest are important. Science and mathematics are valuable high school subjects. Post high school subjects for millwrights, or in industrial maintenance is desirable.

bookbinder

Description of the Occupation:

Bookbinders are craftsmen who do all types of binding, including hand binding, and mass production by machine. They do finishing operations on other kinds of printed materials. General bindery operations include cutting, folding, stitching, sewing or gluing.

Employment in the bookbindery trade may be in a plant which prints books or periodicals, in a commercial printing plant, a large library, or in a job or trade bindery whose customers are other printers.

Some work in binderies requires having highly-skilled and artistic persons employed. Most of the work, however, is now performed by machines. Bindery workers in large plants generally perform only a limited number of hand operations. Men operate the complicated machinery, while women perform simpler tasks.

Training Term:

The apprenticeship term for skilled bookbinders is 7000 hours in 4 years. During each of these years, a minimum of 144 hours of related classroom instruction is required.

Desirable Qualifications:

Applicants should have a high school education. Mechanical aptitude, accuracy, patience and good eyesight are important qualities for an apprentice entering this trade.

apprenticeship

DISTRIBUTION OF ACTIVE APPRENTICES BY MAJOR IN

FOOD PROCESSING AND SERVICE

245

3.3% of all

PLANT MAINTENANCE

Number of Apprentices

476

SERVICE

Number of

MANUFACTURING

Number

GRAPHIC ARTS (PRINTING)

CONSTRUCTION

opportunities

DUSTRIES IN MINNESOTA

Apprentices

6.4% of all Apprentices

Apprentices **898** 12.0% of all Apprentices

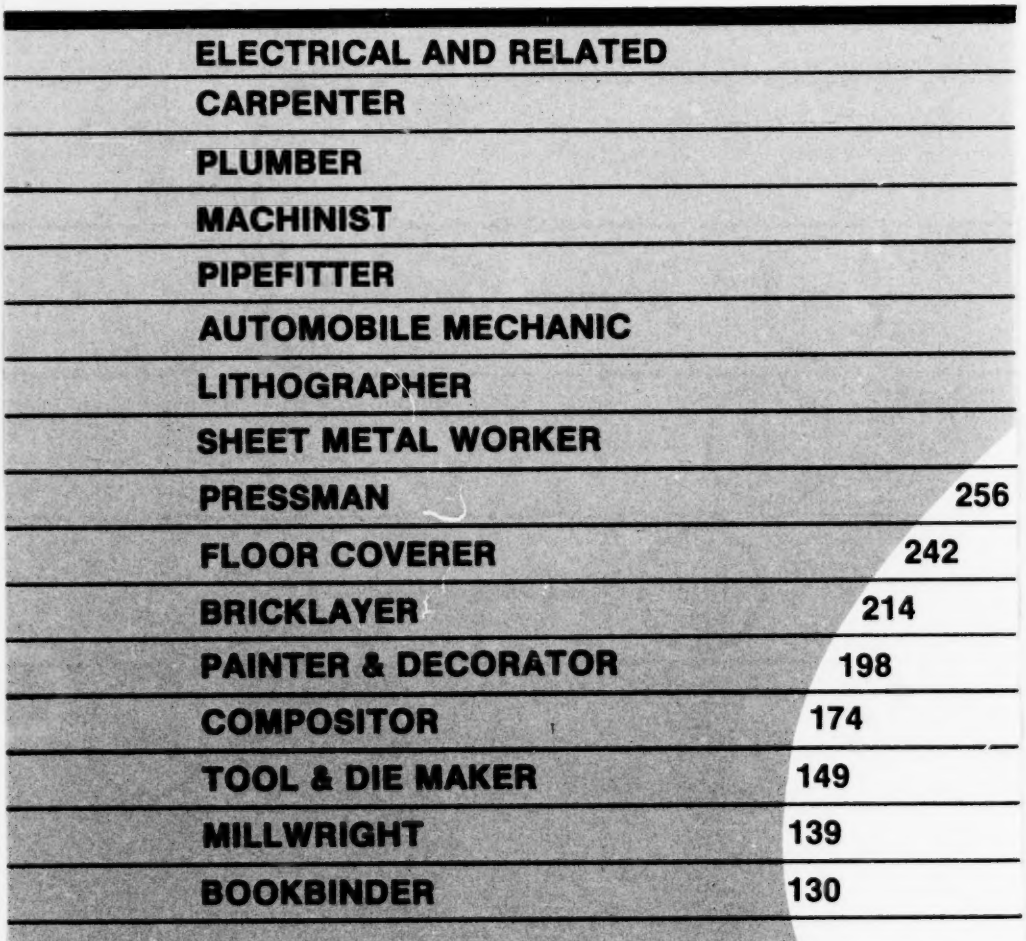
of Apprentices **962** 12.9% of all Apprentices

Number of Apprentices **1010** 13.5% of all Apprentices

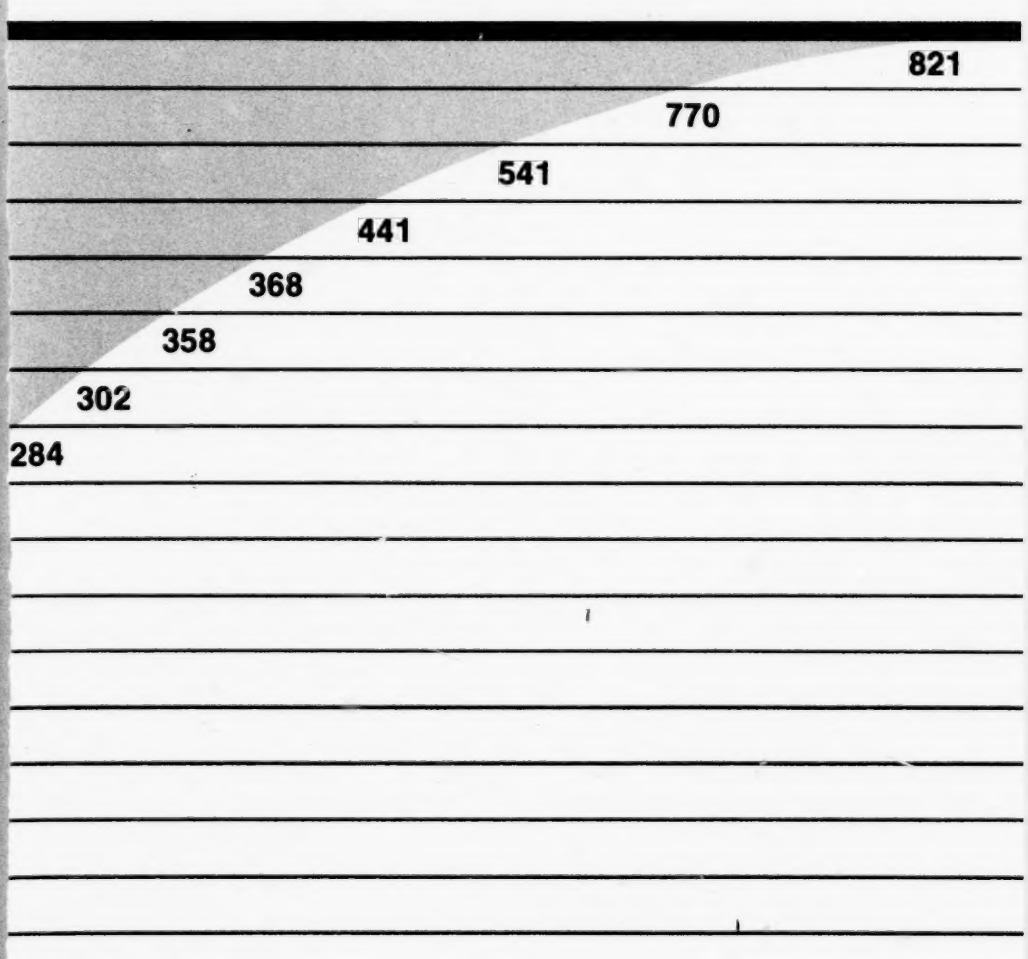
51.9% of all Apprentices Number of Apprentices **3890**

apprenticeship

DISTRIBUTION OF APPRENTICES IN THE TOP 16 TRADES



opportunities



apprenticeship

DISTRIBUTION OF ACTIVE APPRENTICES BY INDUSTRY AND TRADE IN MINNESOTA

THE CONSTRUCTION INDUSTRY	NUMBER
Electrical Wireman	821
Carpenter	770
Plumber	541
Pipefitter	368
Sheet Metal Worker	284
Floor Coverer	242
Bricklayer	214
Painter—Decorator	198
Sprinklerfitter	110
Power Lineman	91
Iron Worker	81
Asbestos Worker	76
Electrical Shopman	73
Cement Mason	60
Glass Trades	60
Tile Setter	40
Plasterer	25
Roofer	11
Lather	7
Sign Hanger	6
Operating Engineer	4
Structural Layout Man	3
Marble Setter	2
Sanitary Well Constructor	1

THE SERVICE INDUSTRY	NUMBER
Automobile Mechanic	358
Painter (Automotive, Sign & Pictoral)	120
Heavy Equipment Mechanic	107
Auto Body & Fender Mechanic	66
Optical Trades	53
Dental Technician	43
Watchmaker	32
Farm Tractor & Implement Mechanic	20
Business Machine Serviceman	20
Radio & TV Technician	15
Carman	14

opportunities

THE SERVICE INDUSTRY	NUMBER
Upholsterer	8
Meter Tester	5
Office Machine Repairman	5
Refrigeration Service Mechanic	5
Motor Boat Mechanic	4
Artificial Limb Technician	4
Displayman & Lettering	4
Furniture Finisher	2
Amusement Device Repair Mechanic	2
Job Shop Welder	2
Locksmith	2
Sewing Machine Mechanic	1
Tailor	1
Aircraft Mechanic	1
Combination Telephoneman	1
Shoe Serviceman	1
Farrier	1
Laboratory Technician	1

THE MANUFACTURING INDUSTRY	NUMBER
Machinist	441
Tool & Die Maker	149
Cabinet Maker—Millman	105
Draftsman	70
Mechanical Assembler	50
Patternmaker	25
Instrument Repairman	22
Boilermaker	18
Molder	14
Jewelry Maker	14
Die Sinker	8
Roll Turner	8
Structural Assembler	8
Systems Control Technician	7
Marker Burner Trainee	5
Beveler	4
Coremaker	3
Pipe & Tubing Assembler	3
Electronics & Control Technician	2
Foundry Technician	2
Hydraulics Technician	2
Electro Mechanical Fabricator	1
Vinyl Plastisol Technician	1

THE GRAPHIC ARTS INDUSTRY	NUMBER
Lithographer	302
Pressman	256
Compositor	174
Bookbinder	130
Envelope Machine Adjuster	30
Class "C" Printer	25
Mailer	25
Photoengraver	21
Envelope Die Cutter	12
Photographers	11
Collator Operator	8
Stereotyper	6
Sheeting Machine Operator	4
Cameraman	4
Rubber and Metal Trades	1
Folding Machine Operator	1

PLANT MAINTENANCE	NUMBER
Electrical (other)	198
Millwright	139
Welder	51
Machinist (other)	35
Maintenance Machine Repairman	21
Stationary Engineer	10
Locomotive	10
Sheet Metal	9
Mech	3

FOOD PRO AND SERVICE INDUSTRY	NUMBER
Meat Cutter	133
Cook	102
Baker	10

you as an apprentice

know yourself

Before Choosing a Career as an Apprentice

In order to know whether or not you wish to be an apprentice, you should first think carefully about your interests, abilities, values and physical characteristics. Some trades require that you work outdoors and may require good physical condition in order to stand extreme weather conditions. Nearly all trades are based on scientific or mechanical principles and require the ability to read well, to do mathematics and to use these skills in solving problems. You might ask yourself some questions to help you in making your decision: Do I like to solve technical problems? Do I have the physical characteristics required for the work in which I am interested? Would I get a sense of satisfaction out of being a craftsman in this kind of trade?

In addition to your interests and abilities, you should also consider your attitudes and habits and see how well they fit in with the attitudes and habits that employers find desirable. Being tardy or absent or "goofing around" during work periods are traits felt to be undesirable by employers. If you have any habits which might hold back your ambitions, you may need to change your behavior to achieve your goals. If necessary, you may wish to seek help from your counselor, principal, teachers, parents or friends.

Physical requirements are often specified in apprenticeship. Your health, hearing, and eyesight must be good. Color blindness can keep you out of certain trades such as printing, electronics, or decorating. Special requirements in various areas might include strength, size and agility. Such requirements are necessary in some trades in order to avoid costly mistakes and to prevent accidents.

Looking at yourself, your interests, abilities, values and goals, should help you to relate these qualities to the opportunities which are available to you. At this time you should not decide on one trade, but keep an open mind and consider a variety of occupations. Before deciding, you should think about the occupational fields in which you believe you can find satisfaction and success. Then compare how your chosen apprenticeable occupation ranks in terms of the number of apprentices who are now employed and those who are being trained.

To become acquainted with the trades which are apprenticeable in Minnesota, see page 13. Here you will find Figure I which shows the number of active apprentices in the six major industries in Minnesota. Figure II illustrates the ranking of the 16 trades with the greatest number of active apprentices. The listing on pages 16-18 shows the number of apprentices in all of the trades that are now active in Minnesota.

MAKE A CAREFUL STUDY OF YOURSELF: DO YOU MEET THE REQUIREMENTS IN THE TRADE OR TRADES WHICH INTEREST YOU?

you and the program

Once you have been selected as an apprentice, a written agreement is made which includes the length of training program—when it begins and ends; a description of the training to be given; and the wages you will receive and other general conditions of employment.

An **apprentice** is one who is learning a skilled trade through work experience and related instruction. He works **with** and learns **from** a skilled craftsman. As an apprentice, you will be supervised by these craftsmen. These craftsmen are very competent or skilled in their particular trades and have earned the title of **journeyman** or **masters.**

You must also take **related training** to gain additional knowledge of your craft. Related training classes may be in a public or private school. If such courses are not locally available they can be furnished through home study by the Minnesota Department of Education's Trade and Industrial Unit. These required courses are in addition to the practical training you receive during your regular work day as an apprentice. Through the job experience and related training, you will eventually become a skilled craftsman. You will earn regular wages for the work you do while you are learning. Wage increases will be given at regular periods if you improve your skills as demonstrated by your work. The schedules of wages for apprentices may vary from occupation to occupation. Generally, apprentices begin training at about 50% of the wage paid qualified journeymen. Increases take place about every 6 month period until the apprentice reaches the journeyman level.

what employers expect

To an employer, an apprenticeship is an investment. He expects his investment to produce a well-trained, skilled craftsman who will be an asset to his business. If you know what the employer expects, and if you are willing to work hard to prepare yourself, your chance of being selected as an apprentice will be improved.

Today, most employers demand at least a high school diploma. If you have continued to prepare yourself beyond high school in a technical or vocational school, you have a better chance of being employed as an apprentice. Your school work (both in high school and technical school) will be reviewed by the prospective employer and compared with other applicants. (Most employers, in selecting employees, regard school records as one of the most

accurate indicators of future performance on the job. You cannot afford to have a poor school record working against you, if you desire a successful future.) It is important to remember that employers generally prefer that prospective apprentices apply soon after completion of their schooling.

make decisions

When you have a good idea of your own personal characteristics and have thoroughly studied your career choices it is time to narrow down to one or two choices. You should be careful to keep in mind your interests and abilities as you weigh the advantages and disadvantages of each trade. Try to consider all evidence in making what you expect to be your final choice.

It is entirely possible, of course, that as time goes on you may change your mind and go into another trade. Fortunately, in most cases, much of what you have learned will also apply to your second choice. Whatever may happen later, however, you should make a choice now and get started.

prepare yourself

Your teachers and counselors will be able to help you select courses in preparing for apprenticeship. With them, you can plan your school work in order to get basic skills—arithmetic, reading, and knowledge of basic science—which are necessary in order to be successful in apprenticeable trades.

Here again, industrial arts courses may be of value. You can use them to begin to develop basic hand skills and become familiar with some parts of industry. The safety rules and procedures that you can learn will be of value to you throughout your working life.

points to consider

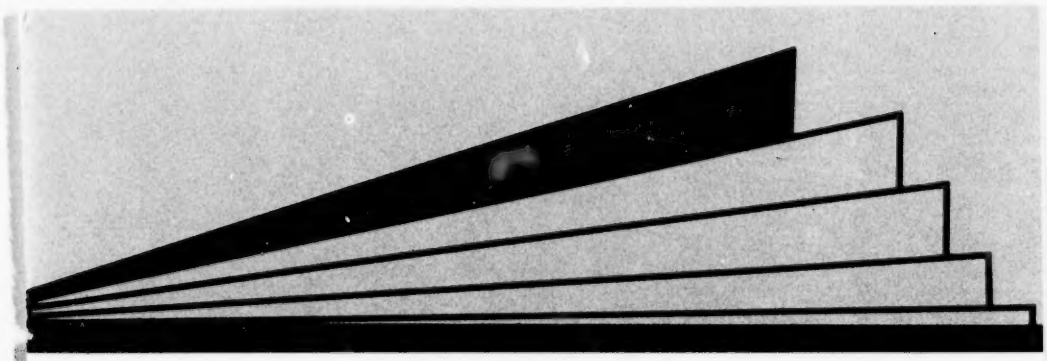
By now, you should have some general ideas whether training through the apprenticeship program is for you. You may also have developed an idea how to approach your vocational choice.

points to consider

- Study many occupations before choosing one.
- Talk to your school counselor regarding your interests and abilities.
- Talk to your parents, counselor, teachers, friends, union representatives regarding the various apprenticeable trades.
- Plan your high school courses according to your vocational interests.
- Look for part time and summer employment to test out your vocational interests.

This booklet, which has provided you with information about selected apprenticeable occupations, may be used in helping you make a choice in an occupation.

This agreement form is completed for each apprentice of record with the Division of Apprenticeship, Minnesota Department of Labor and Industry. Copies of the agreement are furnished to interested parties signatory to the agreement.



V.A.I. Form No. 1 - Revised 1-71

State of Minnesota
Department of Labor and Industry
Division of Voluntary Apprenticeship
St. Paul, Minnesota

Prepared By _____

Apprentice's Soc. Sec. No. _____

Apprentice's V.A. Claim No. _____

Agreement No. _____

Date Approved _____

Director of Apprenticeship _____

– APPRENTICESHIP AGREEMENT –

THIS AGREEMENT, is entered into this _____ day of _____ 19 _____, between:

_____
(Employer, Joint Apprenticeship Committee, Assn. of Employers, or Organization of Employees)

and: _____, born _____, hereinafter referred to as the
(Name of Apprentice)

Apprentice. Male ☐ Female ☐

WITNESSETH, that the Employer, the Apprentice, and his or her Parent or Guardian (if the apprentice is a minor) desire to enter into an agreement of apprenticeship for the trade or craft of _____. That the apprenticeship begins _____, to continue for _____ hours less accreditation of _____ hours.
(date)

with _____ remaining to be completed.

Hours work per week _____ Hours related training attendance per yr. _____
(Must be not less than 144 hours)

That the minimum graduated scale of wages, to be paid the apprentice is: (May be in percentages of journeyman wage or a rate per hour)

_____ months - hours _____ % _____ c.	_____ months - hours _____ % _____ c.
_____ months - hours _____ % _____ c.	_____ months - hours _____ % _____ c.
_____ months - hours _____ % _____ c.	_____ months - hours _____ % _____ c.
_____ months - hours _____ % _____ c.	_____ months - hours _____ % _____ c.
_____ months - hours _____ % _____ c.	_____ months - hours _____ % _____ c.
_____ months - hours _____ % _____ c.	_____ months - hours _____ % _____ c.
_____ months - hours _____ % _____ c.	_____ months - hours _____ % _____ c.

Journeyman wage rate on _____ (date) was _____.

Required school time compensated? yes _____ no _____

That this agreement is subject to the approval of the State Director of Apprenticeship and is binding on the parties hereto including the provisions as stated on the reverse side hereof. Additional conditions and requirements: _____

_____

_____ (SEAL)
Apprentice

_____
Address

_____ (SEAL)
Parent or Guardian

_____
Employer, JAC, Assn. of Employers or Organization of Employees

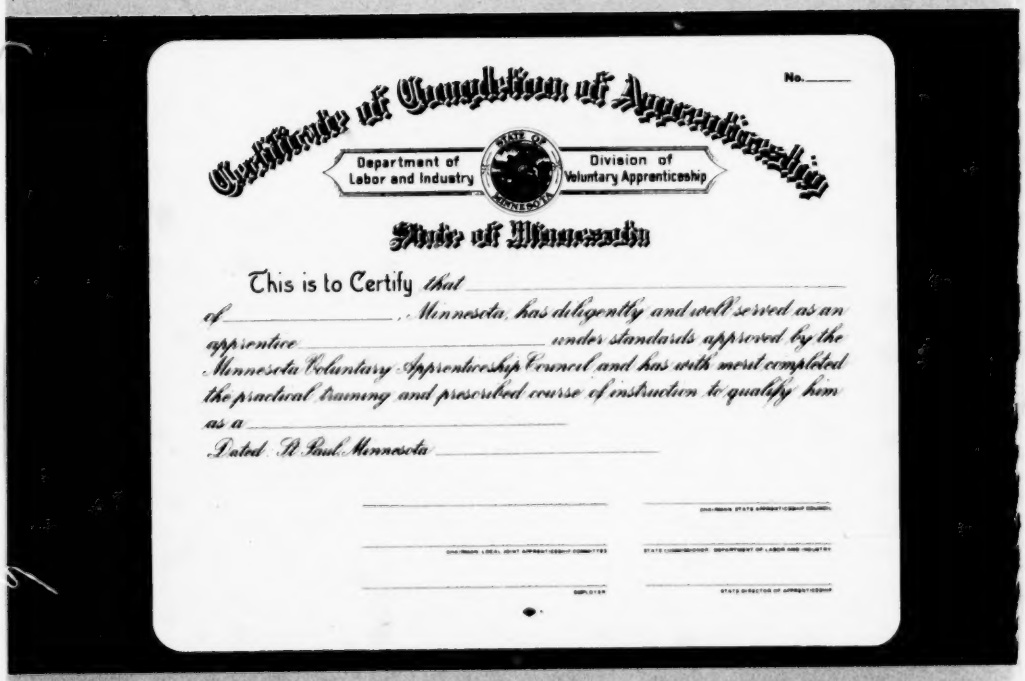
_____ (SEAL)
OFFICER

_____
Address

Approved by _____ Officer _____
(JAC or Org. of Employees)

Under auspices of _____ Officer _____

DIVISION FILE COPY



No. _____

Certificate of Completion of Apprenticeship

Department of Labor and Industry — Division of Voluntary Apprenticeship

State of Minnesota

This is to Certify that _____

of _____, Minnesota, has diligently and well served as an apprentice _____ under standards approved by the Minnesota Voluntary Apprenticeship Council and has with merit completed the practical training and prescribed course of instruction to qualify him as a _____

Dated St. Paul, Minnesota _____

_____ _____

_____ _____

_____ _____

At the time an apprentice completes all requirements of the apprenticeship program as specified by the apprenticeship agreement, the program sponsor forwards to the Division of Apprenticeship information to that effect with a request that the appropriate certificate be issued. Such is issued by the Division upon approval by the Director of Apprenticeship.

how to apply

for apprenticeship

1. Vocational School students may be helped in apprenticeable placement by their school. (For a list of Vocational-Technical Schools see the inside back cover.)

2. The employer, in some instances, is the first person to contact. You may also get started with the help of a joint apprenticeship committee, a union, an employer's organization, a high school or vocational school counselor, or one of the governmental organizations listed below.

3. Check the yellow pages of the telephone book for employers in the field and location of your choice. Contact each of these employers and apply for apprenticeable work.

4. The Minnesota Department of Manpower Services* may help you locate employers who may be willing to hire an apprentice. *(Formerly known as the "Minnesota Employment Service". Local offices are listed on the last page of this booklet.)

The following are governmental service organizations which you may wish to contact for help on locating an apprenticeship opportunity, for information about apprenticeships, or for the actual writing of the apprenticeship agreement:

DIVISION OF APPRENTICESHIP
MINNESOTA DEPARTMENT OF LABOR AND INDUSTRY
110 State Office Building
St. Paul, Minnesota 55101
Phone: 221-2371

BUREAU OF APPRENTICESHIP AND TRAINING
U.S. DEPARTMENT OF LABOR
134 Federal Building
316 Robert Street
St. Paul, Minnesota 55101
Phone: 725-7951 (Area Code, 612)

minnesota
department of manpower services

MINNESOTA DEPARTMENT OF MANPOWER SERVICES

ZIP	OFFICE	ADDRESS	TEL. NO.
56007	Albert Lea	1617 W. Main St.	373-3951
56308	Alexandria	1118 Broadway	763-3188
55912	Austin	105 11th Ave. N.E.	433-3457
56601	Bemidji	312 America Ave.	755-2936
56401	Brainerd	224 W. Washington St.	829-2881
56716	Crookston	114 2nd St. W.	281-3593
55802	Duluth	407 W. Superior St.	722-7491
55731	Ely	30 S. 1st Ave. E.	365-3177
56031	Fairmont	923 N. State St.	235-5518
55021	Faribault	218 Central Ave. N.	334-5531
56537	Fergus Falls	116 E. Lincoln Ave.	739-2295
55744	Grand Rapids	310 N.W. Third St.	326-6669
55746	Hibbing	505 E. Howard St.	263-3644
55343	Hopkins	135 Shady Oak Road S.	935-5521
56649	Int'l Falls	344 Third St.	283-2641
56345	Little Falls	106 1st Ave. S.E.	632-5427
56001	Mankato	633 S. Front St.	389-6723
56258	Marshall	307 W. Lyon St.	532-4433
55401	Minneapolis	309 2nd Ave. S.	333-0192
56265	Montevideo	222 N. First St.	269-8819
56560	Moorhead	1215 Center Ave.	236-2191
55051	Mora	100 S. Park St.	679-3611
56073	New Ulm	1200 S. Broadway	354-3138
55060	Owatonna	Oakdale Shopping Center, Hwy. 65 S.	451-5774
55066	Red Wing	116 Broad St.	388-3526
55901	Rochester	107 4th St. S.E.	289-3368
56301	St. Cloud	115 S. 5th Ave.	255-3266
55101	St. Paul	390 N. Robert St.	227-7301
56701	Thief River Falls	316 N. Labree Ave.	681-1100
55792	Virginia	214 N. 5th Ave.	741-6996
56201	Willmar	324 W. 3rd St.	235-3222
55987	Winona	163 Walnut St.	452-2861
56187	Worthington	321 Eleventh St.	376-3116

minnesota's
area vocational · technical schools

ZIP	SCHOOL	ADDRESS	TEL. NO
56007	Albert Lea	Albert Lea	507-373-7780
56308	Alexandria	Alexandria	612-763-3196
56303	Anoka	Anoka	612-427-1880
55912	Austin	Austin	507-437-6631
56601	Bemidji	Bemidji	218-751-4137
56401	Brainerd	300 Quince St.	218-829-2815
56220	Canby	Canby	507-223-7252
55024	Dakota County	320 3 St., Farmington	612-463-7220
56501	Detroit Lakes	Detroit Lakes	218-847-9261
55802	Duluth	Trinity Road	218-722-4731
56721	East Grand Forks	East Grand Forks	507-773-9672
55734	Eveleth	402 Roosevelt Ave.	218-741-3302
55021	Faribault	Faribault	507-334-3965
56241	Granite Falls	15th St. & 11 Ave.	612-564-4081
55746	Hibbing	505 E. 16th St.	218-262-3824
55350	Hutchinson	Hutchinson	612-896-3053
56143	Jackson	Jackson	507-847-3320
56001	Mankato	1920 Lee Blvd.	507-387-3441
55404	Minneapolis	1101 Third Ave. S.	612-396-0381
56561	Moorhead	Box 100	218-236-6277
56063	Pine City	Pine City	612-629-3844
56164	Pipestone	Pipestone	507-825-5471
55113	Ramsey-Wash. County	St. Paul	612-636-1978
55066	Red Wing	Red Wing	612-388-7181
55901	Rochester	Rochester	507-282-9411
56301	St. Cloud	1601 N. 9th Ave.	612-252-0101
55102	St. Paul	235 Marshall	612-227-9121
56479	Staples	Staples	218-894-2430
55435	Suburban Hennepin Co.	4570 W. 77 St. Minneapolis	612-546-3535
56701	Thief River Falls	Thief River Falls	218-681-5424
56482	Wadena	405 S.W. Colfax Ave.	218-631-3342
56201	Willmar	Willmar	612-235-5114
55987	Winona	1250 Homer Road	507-454-4600